CLAIM LISTING:

1. (Previously presented) A system for exerting a compressive force on an exterior treatment portion of a user's body in synchrony with the heart beat of the user, comprising:

a covering member for covering the treatment portion; and

an electroactive polymer (EAP) actuator operably connected to the covering member, wherein said electroactive polymer actuator comprises an electroactive polymer member, a counter electrode and an electrolyte-containing region disposed between the electroactive polymer member and the counter electrode.

2. (Original) The system of claim 1 wherein the EAP actuator is rigidly connected to the covering member.

3. (Original) The system of claim 2 wherein the EAP actuator is connected to the covering member by adhesive.

4. (Original) The system of claim 2 wherein the EAP actuator is stitched to the covering member.

5. (Original) The system of claim 2 wherein the EAP actuator is woven into the covering member.

6. (Original) The system of claim 1 and further comprising: a controller operably coupled to the EAP actuator to provide a drive signal to drive actuation of the EAP actuator.

7. (Original) The system of claim 6 wherein the covering member is flexible such that actuation of the EAP actuator drives deformation of the covering member.

8. (Original) The system of claim 7 and further comprising: a heart sensor sensing a sinus rhythm of the heart and providing a heart sensor signal indicative of the sinus rhythm.

9. (Original) The system of claim 8 wherein the controller is configured to provide the drive signal based on the heart sensor signal.

10. (Original) The system of claim 9 and further comprising: a feedback component sensing a feedback characteristic and providing a feedback signal indicative of the sensed feedback characteristic.

11. (Original) The system of claim 10 wherein the controller is configured to provide the drive signal based on the feedback signal.

12. (Original) The system of claim 11 wherein the feedback component comprises: a metabolic sensor sensing a metabolic characteristic and providing the feedback signal based on the metabolic characteristic.

13. (Original) The system of claim 11 wherein the feedback component comprises: a blood flow sensor.

14. (Original) The system of claim 11 wherein the feedback component comprises: a blood pressure sensor.

15. (Original) The system of claim 1 wherein the covering member comprises a garment.

16. (Original) The system of claim 6 wherein the controller is configured to provide the drive signal to exert counterpulsation force on the treatment portion.

17. (Original) The system of claim 1 and further comprising: a plurality of EAP actuators operably connected to the covering member.

18. (Previously presented) A counterpulsation apparatus, comprising: a garment; and an electroactive polymer (EAP) actuator connected to the garment, wherein said

electroactive polymer actuator comprises an electroactive polymer member, a counter electrode and an electrolyte-containing region disposed between the electroactive polymer member and the counter electrode.

19. (Original) The counterpulsation apparatus of claim 18 and further comprising: a plurality of EAP actuators connected to the garment.

20. (Original) The counterpulsation apparatus of claim 19 wherein the garment is formed of a fabric material.

21. (Original) The counterpulsation apparatus of claim 20 wherein the plurality of EAP actuators are woven into the fabric material.

22. (Original) The counterpulsation apparatus of claim 20 wherein the plurality of EAP actuators are stitched to the fabric material.

23. (Original) The counterpulsation apparatus of claim 20 wherein the plurality of EAP actuators are connected to the fabric material with adhesive.

24. (Original) The counterpulsation apparatus of claim 19 wherein the garment comprises multiple layers of fabric material and wherein the plurality of EAP actuators are disposed between the layers.

25. (Previously presented) A method of exerting pressure on an external treatment area of a patient, comprising: providing a garment to cover the treatment area; and actuating electroactive polymer (EAP) actuators connected to the garment in synchrony with the heart beat of the user, wherein said electroactive polymer actuators comprise an electroactive polymer member, a counter electrode and an electrolyte-containing region disposed between the electroactive polymer member and the counter electrode.

26. (Original) The method of claim 25 and further comprising: sensing a heart beat of the

patient and providing a heart beat sensor signal indicative of the sensed heart beat.

27. (Original) The method of claim 26 and further comprising: actuating the EAP actuators to exert counterpulsation pressure based on the heart beat sensor signal.

28. (Original) The method of claim 27 and further comprising: sensing a biological characteristic indicative of an efficaciousness of the counterpulsation pressure and providing a biological sensor signal indicative of the sensed characteristic.

29. (Original) The method of claim 28 wherein actuating the EAP actuators comprises: actuating the EAP actuators based on the biological sensor signal.

30. (Previously presented) The system of claim 1, wherein the electroactive polymer actuator comprises a conducting polymer.

31. (Previously presented) The system of claim 1, wherein the electroactive polymer actuator comprises a conducting polymer selected from polyaniline, polypyrrole, polysulfone, polyacetylene and combinations thereof.

32. (Previously presented) The counterpulsation apparatus of claim 18, wherein the electroactive polymer actuator comprises a conducting polymer.

33. (Previously presented) The counterpulsation apparatus of claim 18, wherein the electroactive polymer actuator comprises a conducting polymer selected from polyaniline, polypyrrole, polysulfone, polyacetylene and combinations thereof.

34. (Previously presented) The method of claim 25, wherein the electroactive polymer actuators comprise a conducting polymer.

35. (Previously presented) The method of claim 25, wherein the electroactive polymer actuators comprise a conducting polymer selected from polyaniline, polypyrrole, polysulfone, polyacetylene and combinations thereof.